

CLAIMS

1. A wireless packet communication method for transmitting a plurality of wireless packets simultaneously by using multiple wireless channels determined to be idle by carrier sense, a single wireless channel determined to be idle and MIMO, or the multiple wireless channels and the MIMO, the method characterized by comprising:

setting a mandatory channel that is always used for transmission; and
transmitting the wireless packets by using a wireless channel/wireless channels that includes/include the mandatory channel, only when the mandatory channel is idle.

2. A wireless packet communication method for transmitting a plurality of wireless packets simultaneously by using multiple wireless channels determined to be idle by carrier sense, a single wireless channel determined to be idle and MIMO, or the multiple wireless channels and the MIMO, the method characterized by comprising:

distinguishing an STA A from an STA B, the STA A for which a mandatory channel is set, the STA B for which no mandatory channel is set, the mandatory channel being always used for transmission; and

when wireless packets are addressed to said STA A, transmitting the wireless packets to said STA A by using a wireless channel/wireless channels that includes/include the mandatory channel, only when the mandatory channel is idle; and

when wireless packets are addressed to said STA B, transmitting the wireless packets to said STA B by using idle wireless channel(s).

3. The wireless packet communication method according to Claim 1 or 2, characterized in that

the plurality of wireless packets transmitted simultaneously are set to have a same or equivalent packet time length that corresponds to a packet size or a transmission time.

25 4. The wireless packet communication method according to Claim 1 or 2,

characterized by further comprising

simultaneously transmitting wireless packets selectively using the multiple wireless channels or the MIMO in accordance with a number of pieces of data or a number of MIMOs that depends on a channel condition.

5 5. A wireless packet communication apparatus for transmitting a plurality of wireless packets simultaneously by using multiple wireless channels determined to be idle by carrier sense, a single wireless channel determined to be idle and MIMO, or the multiple wireless channels and the MIMO, the apparatus characterized by comprising

a unit setting a mandatory channel that is always used for transmission, and
10 transmitting the wireless packets only when the mandatory channel is idle by using a wireless channel or wireless channels that includes/include the mandatory channel.

6. A wireless packet communication apparatus for transmitting a plurality of wireless packets simultaneously by using multiple wireless channels determined to be idle by carrier sense, a single wireless channel determined to be idle and MIMO, or the multiple wireless channels and the MIMO, the apparatus characterized by comprising

a unit distinguishing an STA A from an STA B and determining destinations of the wireless packets so as to transmit wireless packets addressed to said STA A only when said mandatory channel is idle by using a wireless channel or wireless channels that includes/include a mandatory channel, and to transmit wireless packets addressed to said 20 STA B by using idle wireless channel or channels, the mandatory channel being always used for transmission, the STA A for which the mandatory channel is set, the STA B for which no mandatory channel is set.

7. The wireless packet communication apparatus according to Claim 5 or 6,
characterized in that

25 the plurality of wireless packets transmitted simultaneously are set to have a same

or equivalent packet time length that corresponds to a packet size or a transmission time.

8. The wireless packet communication apparatus according to Claim 5 or 6,

characterized by further comprising:

a unit simultaneously transmitting wireless packets selectively using the multiple

5 wireless channels or the MIMO in accordance with a number of pieces of data or a number

of MIMOs that depends on a channel condition.